

# Dispatcher Training

## Working with the National Weather Service



Near Creston on March 22, 2011



Courtesy Kevin Skow



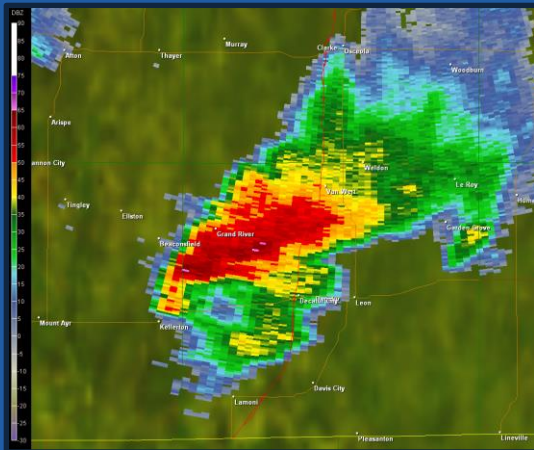
Wind Damage, Tama Co. July 11, 2011



Building a Weather-Ready Nation

# Dispatcher Training

- What is the National Weather Service (NWS)?
- Understanding our role and services
- Severe weather for dispatchers
- What the NWS needs to know from dispatchers
- When to contact the NWS
- Optimizing communication
- Case Study



Southern  
Iowa  
April, 2011

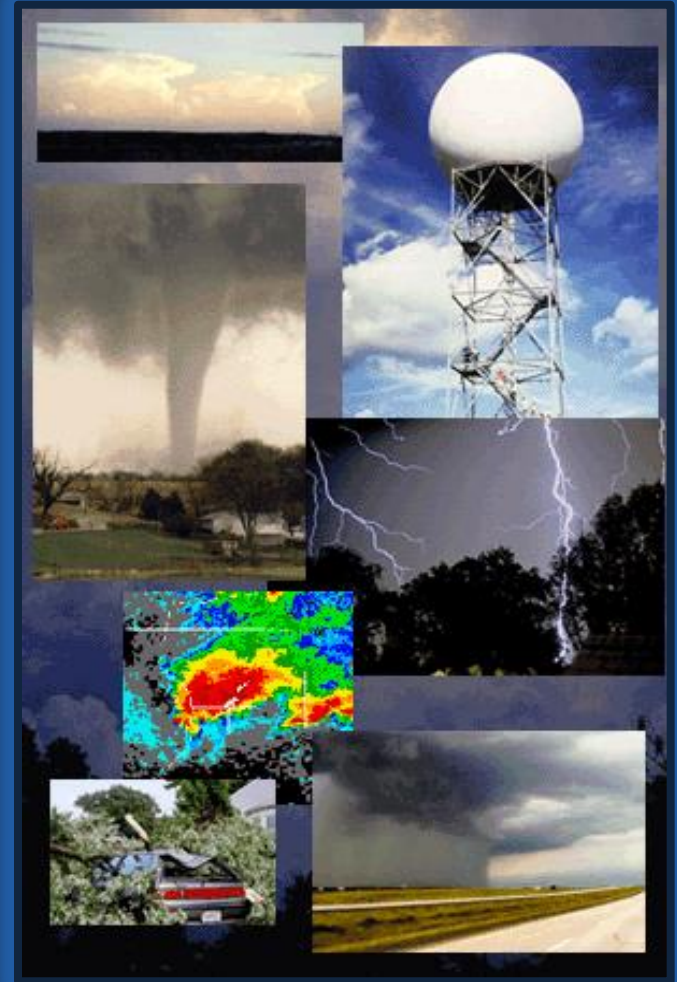


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# What is the National Weather Service?

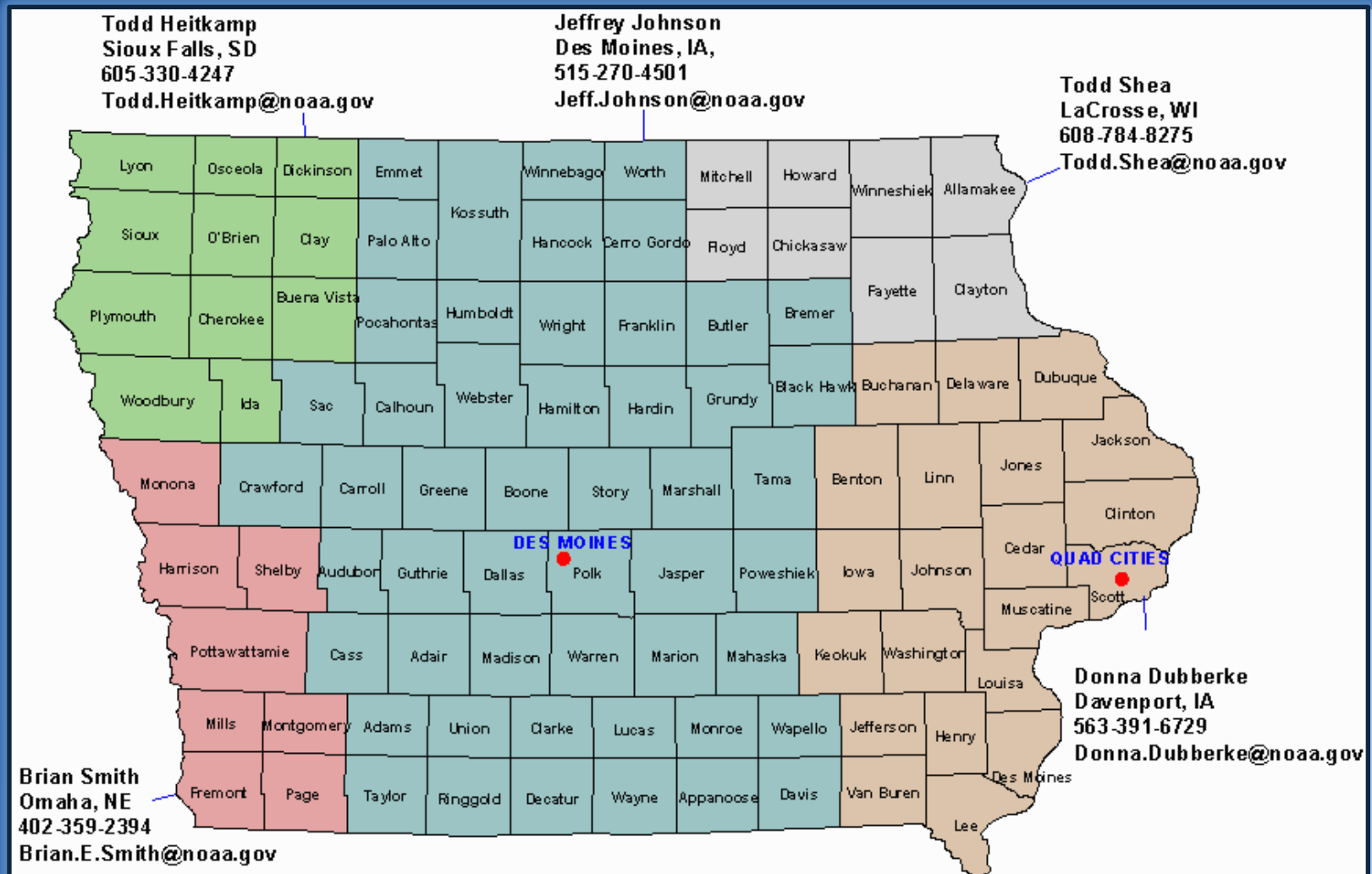
- A federal government agency created by Congress, with roots back to the Civil War
- Part of NOAA – National Oceanic & Atmospheric Administration

*Mission: Protection of Life and Property*



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# What is the National Weather Service?



National Weather Service responsibility areas in Iowa



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# What is the National Weather Service?

- Total staff of 23 people
- 24 hour shift coverage
- Rotating shifts
- Provides continuous warning and forecast services

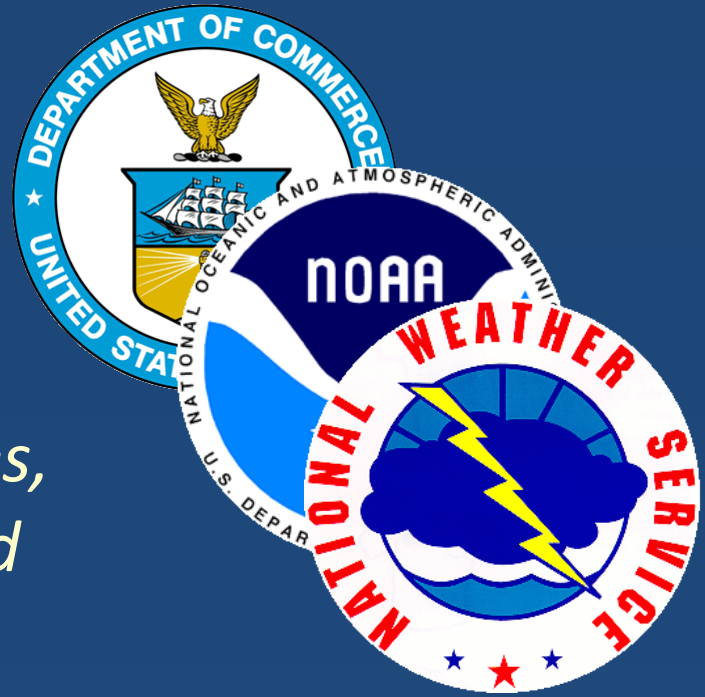


## National Weather Service Office Staffing and Operations

# Understanding Our Role and Services

## National Weather Service Mission Statement

*"The National Weather Service (NWS) provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy."*



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# Understanding Our Role and Services

- We can't stop storms!
- We can't knock on every door and tell them it's coming!
- What can we do?



How can we protect property and save lives?

# Understanding Our Role and Services

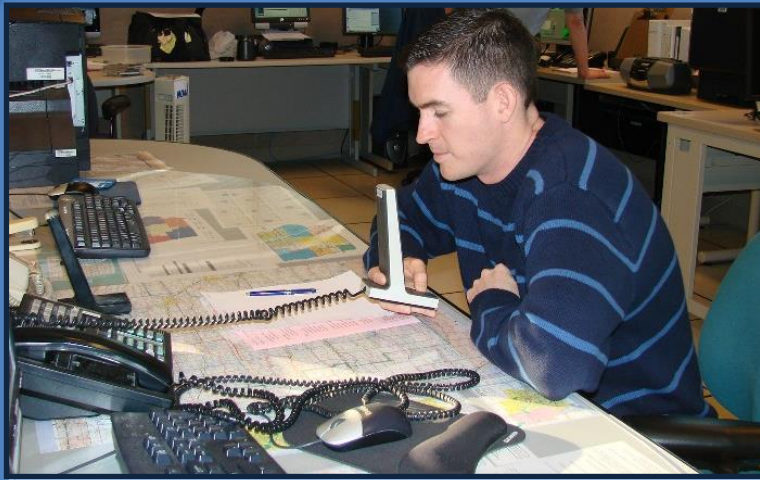
- Preparedness
- Forecast and warning services
- Dissemination of emergency messages



Our goal is for people to make informed and educated decisions for themselves!



# Understanding Our Role and Services



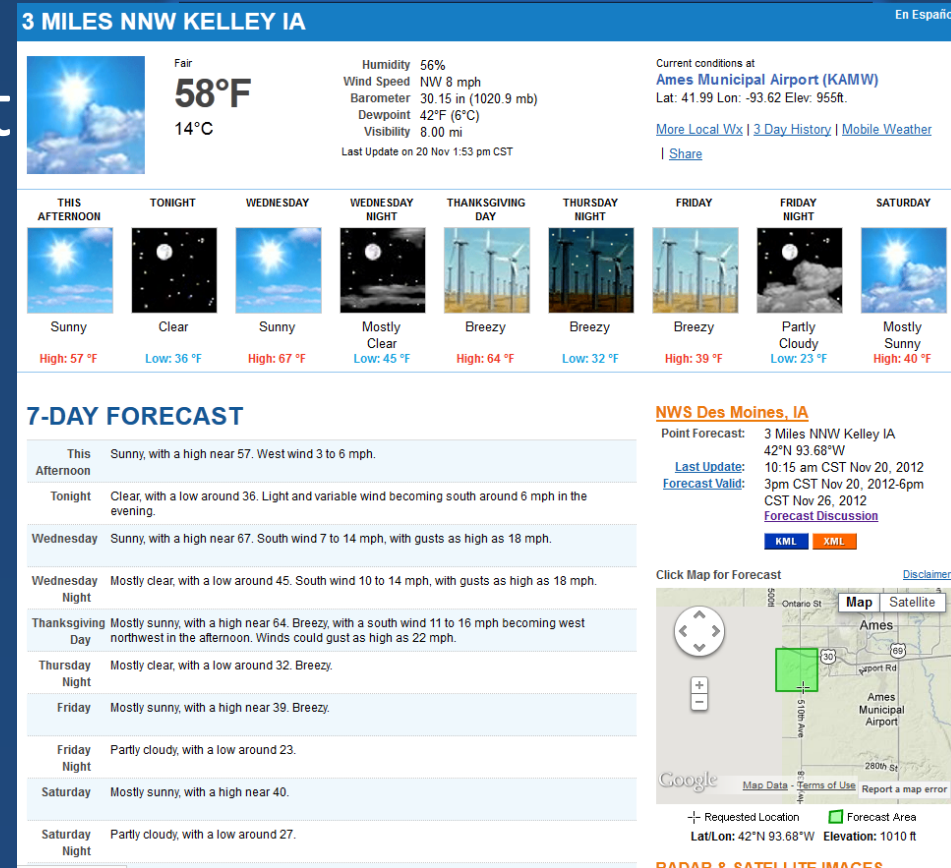
In other words,  
***Our*** job is to help ***you*** do ***your*** job!



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# Understanding Our Role and Services

- National Digital Forecast Database (NDFD)
- All “worded” forecasts fall out of the NDFD
- NWS Website for best access



Point and Click  
Forecast  
Forecast Services



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# Understanding Our Role and Services

URGENT - WINTER WEATHER MESSAGE  
NATIONAL WEATHER SERVICE DES MOINES IA  
706 AM CST SAT FEB 4 2012

...MODERATE TO HEAVY SNOW EXPECTED TO EXPAND ACROSS CENTRAL AND SOUTHWEST IOWA TODAY...

...A POWERFUL WINTER STORM WILL AFFECT THE AREA TODAY AND BRING MODERATE TO HEAVY SNOWFALL TO THE REGION. A PERIOD OF THUNDER IS POSSIBLE THIS MORNING OVER THE SOUTHWEST. IF THE THUNDER SNOW OCCURS... SNOWFALL RATES WILL APPROACH 2 INCHES PER HOUR. THE SNOWFALL WILL GRADUALLY DIMINISH FROM NORTH TO SOUTH THIS AFTERNOON.

IAZ044>048-057>060-070>072-081-082-042115-  
/O.CON.KDMX.WS.W.0002.000000T0000Z-120205T1200Z/  
CRAWFORD-CARROLL-GREENE-BOONE-STORY-AUDUBON-GUTHRIE-DALLAS-POLK-  
CASS-ADAIR-MADISON-ADAMS-UNION-  
INCLUDING THE CITIES OF...DENISON...CARROLL...JEFFERSON...BOONE...  
AMES...AUDUBON...GUTHRIE CENTER...ADEL...DES MOINES...ATLANTIC...  
GREENFIELD...WINTERSET...CORNING...CRESTON  
706 AM CST SAT FEB 4 2012

...WINTER STORM WARNING REMAINS IN EFFECT UNTIL 6 AM CST SUNDAY...

\* SHORT TERM TRENDS...SNOW WILL CONTINUE TO EXPAND ACROSS THE AREA THIS MORNING. THE SNOW WILL BE HEAVY AT TIMES THIS THROUGH NOON TODAY WITH INTENSITIES DIMINISHING THROUGH THE AFTERNOON.

\* STORM TOTAL SNOW...TOTAL SNOWFALL AMOUNTS FROM 4 TO 8 INCHES ARE FORECAST FOR THE AREA. THE HEAVIER AMOUNTS ARE EXPECTED OVER THE WESTERN PORTION OF THE WARNED AREA. LOCALLY HIGHER AMOUNTS MAY OCCUR.

\* WINDS/VISIBILITY...NORTHEAST WINDS OF 20 TO 30 MPH WITH A FEW HIGHER GUSTS WILL CAUSE VISIBILITY RESTRICTIONS AND DRIFTING OF SNOW TODAY AND TONIGHT.

\* IMPACTS...HEAVY SNOW WILL MAKE TRAVEL DANGEROUS DURING THE PERIOD. THE FALLING SNOW...COMBINED WITH STRONG WINDS... WILL LEAD TO REDUCED VISIBILITIES. UNTREATED SURFACES WILL BECOME ICY AS THE SNOW FREEZES TO THE PAVEMENT.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A WINTER STORM WARNING FOR HEAVY SNOW MEANS SEVERE WINTER WEATHER CONDITIONS ARE EXPECTED OR OCCURRING. SIGNIFICANT AMOUNTS OF SNOW ARE FORECAST THAT WILL MAKE TRAVEL DANGEROUS. ONLY TRAVEL IN AN EMERGENCY. IF YOU MUST TRAVEL...KEEP AN EXTRA FLASHLIGHT...

Headline

Overview Section

Each segment has a listing of counties and cities – best viewed graphically

Short Term Trends

Storm Information

Impacts and Call to Actions

## Winter and Non-Precipitation Watch/Warning/Advisory Services



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# Understanding Our Role and Services



## Warning Services Timeline



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# Impact Based Warnings

THE NATIONAL WEATHER SERVICE IN SPRINGFIELD HAS ISSUED A  
 \* TORNADO WARNING FOR...  
 NORTHWESTERN NEWTON COUNTY IN SOUTHWEST MISSOURI...  
 SOUTHEASTERN CHEROKEE COUNTY IN SOUTHEAST KANSAS...  
 SOUTHWESTERN JASPER COUNTY IN SOUTHWEST MISSOURI...  
 THIS INCLUDES THE CITY OF JOPLIN...  
 \* UNTIL 600 PM CDT.

\* AT 514 PM CDT...A TORNADO EMERGENCY FOR THE CITY OF JOPLIN.  
 A CONFIRMED LARGE AND DESTRUCTIVE TORNADO WAS LOCATED NEAR  
 BAXTER SPRINGS MOVING NORTHEAST AT 40 MPH.

THIS IS A PARTICULARLY DANGEROUS SITUATION.  
 HAZARD...DEADLY TORNADO AND BASEBALL SIZE HAIL  
 SOURCE...SPOTTERS AND LAW ENFORCEMENT CONFIRMED TORNADO.  
 SIGNIFICANT DAMAGE TO HOMES REPORTED IN THE OAKS  
 SUBDIVISION.

IMPACT...LIFE THREATENING SITUATION. EXTENSIVE DAMAGE TO HOMES  
 AND BUILDINGS...UPROOTED TREES AND DEBRIS WILL  
 RESTRICT ACCESS INTO MANY AREAS.

\* OTHER LOCATIONS IN THE WARNING...JOPLIN.  
 PRECAUTIONARY/PREPAREDNESS ACTIONS...  
 IF YOU ARE IN OR NEAR JOPLIN TAKE COVER IMMEDIATELY!  
 &&  
 LAT...LON 3716 9479 3707 9426 3607 9430 3701 9479  
 TIME...MOT...LOC 2216Z 247DEG 36KT 3708 9470

TORNADO...OBSERVED  
 TORNADO DAMAGE THREAT...CATASTROPHIC  
 HATI 2 75TN

A Tornado Emergency must contain a  
 “Catastrophic” Tag

## Tornado Tag

TORNADO...RADAR INDICATED	Evidence on radar and near storm environment is supportive, but no confirmation.
TORNADO...OBSERVED	Tornado is confirmed by spotters, law enforcement, etc.

## Tornado Damage Threat Tag

No Tag	Use most of the time, when tornado damage possible within the warning polygon. Tornado duration generally expected to be short-lived
TORNADO DAMAGE THREAT...CONSIDERABLE	Use rarely, when there is credible evidence that a tornado, capable of producing considerable damage, is imminent or ongoing. Tornado duration generally expected to be long lived
TORNADO DAMAGE THREAT...CATASTROPHIC	Use exceedingly rarely, when a severe threat to human life and catastrophic damage from a tornado is occurring, and will only be used when reliable sources confirm a violent tornado.. Tornado duration generally expected to be long lived

## Tornado Tag In Severe Thunderstorm Warnings

TORNADO...POSSIBLE	A severe thunderstorm has some potential for producing a tornado although forecaster confidence is not high enough to issue a Tornado Warning.
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# Understanding Our Role and Services

THE NATIONAL WEATHER SERVICE IN LINCOLN HAS ISSUED A

\* TORNADO WARNING FOR...  
SOUTH CENTRAL PEORIA COUNTY IN CENTRAL ILLINOIS...  
NORTHERN TAZEWELL COUNTY IN CENTRAL ILLINOIS...  
WESTERN WOODFORD COUNTY IN CENTRAL ILLINOIS...

\* UNTIL 1115 AM CST

\* AT 1049 AM CST...A SEVERE THUNDERSTORM CAPABLE OF PRODUCING A  
TORNADO WAS LOCATED NEAR PEKIN...AND MOVING NORTHEAST AT 55 MPH.

HAZARD...TORNADO AND QUARTER SIZE HAIL.

SOURCE...RADAR INDICATED ROTATION.

IMPACT...MOBILE HOMES WILL BE DAMAGED OR DESTROYED. DAMAGE TO  
ROOFS...WINDOWS AND VEHICLES WILL OCCUR. FLYING DEBRIS  
WILL BE DEADLY TO PEOPLE AND ANIMALS. TREE DAMAGE IS  
LIKELY.

\* THIS DANGEROUS STORM WILL BE NEAR...  
MARQUETTE HEIGHTS AND CREVE COEUR AROUND 1055 AM CST.  
EAST PEORIA AND MORTON AROUND 1100 AM CST.  
WASHINGTON AND GERMANTOWN HILLS AROUND 1105 AM CST.  
DEER CREEK AROUND 1110 AM CST.  
EUREKA AND METAMORA AROUND 1115 AM CST.

TAKE COVER NOW. MOVE TO AN INTERIOR ROOM ON THE LOWEST FLOOR OF A  
STURDY BUILDING. AVOID WINDOWS. IF IN A MOBILE HOME...A VEHICLE OR  
OUTDOORS...MOVE TO THE CLOSEST SUBSTANTIAL SHELTER AND PROTECT  
YOURSELF FROM FLYING DEBRIS.

&&

LAT...LON 4092 8933 4066 8905 4049 8970 4056 8978  
TIME...MOT...LOC 1650Z 235DEG 50KT 4056 8966

TORNADO...RADAR INDICATED  
HAIL...1.00IN

Counties – best viewed graphically

Basis, location and movement

Hazard, source and impacts

Locations (city list or pathcast)

Call to Actions

Tags

Tornado Warnings = Tornado (also implies severe wind/hail possible)



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# Understanding Our Role and Services

...A TORNADO WARNING REMAINS IN EFFECT FOR CENTRAL WOODFORD AND NORTH CENTRAL TAZEVELL COUNTIES UNTIL 1115 AM CST...

AT 1103 AM CST...A CONFIRMED LARGE AND EXTREMELY DANGEROUS TORNADO WAS LOCATED NEAR WASHINGTON...AND MOVING NORTHEAST AT 55 MPH.

THIS IS A PARTICULARLY DANGEROUS SITUATION.

HAZARD...DAMAGING TORNADO.

SOURCE...EMERGENCY MANAGEMENT CONFIRMED TORNADO.

IMPACT...YOU ARE IN A LIFE THREATENING SITUATION. MOBILE HOMES WILL BE DESTROYED. CONSIDERABLE DAMAGE TO HOMES...BUSINESSES AND VEHICLES IS LIKELY AND COMPLETE DESTRUCTION POSSIBLE. FLYING DEBRIS WILL BE DEADLY TO PEOPLE AND ANIMALS. EXPECT TREES TO BE UPROOTED OR SNAPPED.

THE TORNADO WILL AFFECT MAINLY RURAL AREAS OF CENTRAL WOODFORD AND NORTH CENTRAL TAZEVELL COUNTIES...INCLUDING THE FOLLOWING LOCATIONS...EUREKA.

INTERSTATE 74 BETWEEN MILE MARKERS 100 AND 103.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

TO REPEAT...A LARGE...EXTREMELY DANGEROUS AND POTENTIALLY DEADLY TORNADO IS ON THE GROUND. TO PROTECT YOUR LIFE...TAKE COVER NOW. MOVE TO AN INTERIOR ROOM ON THE LOWEST FLOOR OF A STURDY BUILDING. AVOID WINDOWS. IF IN A MOBILE HOME...A VEHICLE OR OUTDOORS...MOVE TO THE CLOSEST SUBSTANTIAL SHELTER AND PROTECT YOURSELF FROM FLYING DEBRIS.

&&

LAT...LON 4060 8947 4067 8954 4083 8923 4074 8913  
TIME...MOT...LOC 1706Z 235DEG 50KT 4070 8943

TORNADO...OBSERVED  
TORNADO DAMAGE THREAT...CONSIDERABLE  
HAIL...0.00IN

Basis, location and movement

Hazard, source and impacts

Locations (city list or pathcast)

Call to Actions

Tags

Follow-up Severe Weather Statement = Additional detail to a warning



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# Understanding Our Role and Services

THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A

\* SEVERE THUNDERSTORM WARNING FOR...  
DALLAS COUNTY IN CENTRAL IOWA...  
NORTHERN MADISON COUNTY IN SOUTH CENTRAL IOWA...

\* UNTIL 345 PM CDT

\* AT 252 PM CDT...A SEVERE THUNDERSTORM WAS LOCATED 6 MILES NORTH OF  
STUART...AND MOVING NORTHEAST AT 40 MPH.

HAZARD...QUARTER SIZE HAIL AND 60 MPH WIND GUSTS.

SOURCE...RADAR INDICATED.

IMPACT...HAIL DAMAGE TO VEHICLES IS EXPECTED. EXPECT WIND DAMAGE TO  
ROOFS...SIDING AND TREES.

\* LOCATIONS IMPACTED INCLUDE...  
EARLHAM...DE SOTO...ADEL...DALLAS CENTER...WAUKEE...WOODWARD...  
DEXTER...LINDEN...REDFIELD...VAN METER...MINBURN...BOUTON AND  
GRANGER.

THIS INCLUDES INTERSTATE 80 BETWEEN MILE MARKERS 97 AND 121.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

FOR YOUR PROTECTION MOVE TO AN INTERIOR ROOM ON THE LOWEST FLOOR OF A  
BUILDING.

LARGE HAIL...DAMAGING WINDS AND CONTINUOUS CLOUD TO GROUND LIGHTNING  
IS OCCURRING WITH THIS STORM. MOVE INDOORS IMMEDIATELY. LIGHTNING  
KILLS. REMEMBER...IF YOU CAN HEAR THUNDER...YOU ARE CLOSE ENOUGH TO  
BE STRUCK BY LIGHTNING.

&&

LAT...LON 4160 9424 4160 9428 4175 9428 4187 9400  
4186 9382 4160 9381 4160 9380 4147 9379  
4140 9424

TIME...MOT...LOC 1956Z 241DEG 33KT 4160 9430

HAIL...1.00IN

WIND...60MPH

Counties – best viewed graphically

Basis, location and movement

Hazard, source and impacts

Impacted locations (city list or pathcast)

Call to Actions

Max wind/hail tag

## Severe Thunderstorm Warnings – 1 inch hail and/or 58 mph winds



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# Understanding Our Role and Services

BULLETIN - EAS ACTIVATION REQUESTED  
FLASH FLOOD WARNING  
NATIONAL WEATHER SERVICE DES MOINES IA  
923 PM CDT TUE AUG 10 2010

THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A

\* FLASH FLOOD WARNING FOR...  
BLACK HAWK COUNTY IN NORTHEAST IOWA...  
BREMER COUNTY IN NORTHEAST IOWA...  
BUTLER COUNTY IN NORTH CENTRAL IOWA...  
GRUNDY COUNTY IN CENTRAL IOWA...  
TAMA COUNTY IN CENTRAL IOWA...

\* UNTIL 330 AM CDT WEDNESDAY

\* AT 922 PM CDT...NATIONAL WEATHER SERVICE DOPPLER RADAR INDICATED  
SLOW MOVING THUNDERSTORMS WITH VERY HEAVY RAINFALL ACROSS THE  
WARNED AREA. RAINFALL RATES OF 1 TO 2 INCHES PER HOUR CAN BE  
EXPECTED WITHIN THE WARNED AREA.

\* RUNOFF FROM THIS EXCESSIVE RAINFALL WILL CAUSE FLASH FLOODING TO  
OCCUR. SOME LOCATIONS THAT WILL EXPERIENCE FLOODING INCLUDE...  
WATERLOO...ALLISON...APLINGTON...CEDAR FALLS...CLARKSVILLE...  
CONRAD...DENVER...DYSART...EVANSDALE...GREENE...GRUNDY CENTER...  
HUDSON...LA PORTE CITY...PARKERSBURG...REINBECK...SHELL ROCK...  
SUMNER...TAMA...TOLEDO...TRIPOLI AND WAVERLY.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

ADDITIONAL RAINFALL AMOUNTS OF UP TO 3 INCHES ARE POSSIBLE IN  
THE WARNED AREA.

EXCESSIVE RUNOFF FROM HEAVY RAINFALL WILL CAUSE FLOODING OF SMALL  
CREEKS AND STREAMS...HIGHWAYS AND UNDERPASSES. ADDITIONALLY...  
COUNTRY ROADS AND FARMLANDS ALONG THE BANKS OF CREEKS...STREAMS AND  
OTHER LOW LYING AREAS ARE SUBJECT TO FLOODING.

Counties – best viewed graphically

Basis, location and movement

Impacted locations (city list and/or streams)

Call to Actions

## Flash Flood Warnings – Imminent or occurring



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# Understanding Our Role and Services

## “Emergencies”

- Tornado Emergency – A destructive confirmed tornado which will likely move into a populated area resulting in serious property damage and a high potential for loss of life! Catastrophic tag!
- Flash Flood – A serious flash flood which will likely cause severe damage and a high potential for loss of life!





# Severe Weather for Dispatchers

## What is a Tornado?

- A violently rotating column of air attached to a cloud base and in contact with the ground.
- Exhibit rapid rotation and are most often laminar or smooth in appearance
- Can have visible and invisible funnels
- Usually vertically oriented



Courtesy of Jeff & Amy Ruhland



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# Severe Weather for Dispatchers

## Tornado Types and Terms

- **Wedge** – Large tornado
- **Invisible** – A tornado without a condensation funnel
- **Funnel** – Rotating column of air NOT on the ground
- **EF Rating** – Enhanced Fujita rating which indicates a tornadoes strength



Courtesy of Jeff & Amy Ruhland

Funnel Cloud



Invisible Tornado



Wedge Tornado

# Severe Weather for Dispatchers

## Tornado Lookalikes

- Scud
- Rain-shafts



## Key to Know

- Rotation?
- Debris?



# Severe Weather for Dispatchers

## Severe Straight-Line Wind Storms

- Large area
- Damaging straight-line winds (over 100 mph!)
- Tornado-like damage!
- Signature cloud – Shelf cloud
- Siren considerations?



July 11, 2011 Derecho

Contour Legend Black: General Severe Winds (58 mph+)  
Yellow: Winds of 70mph + Red: Winds of 100 mph +





# Severe Weather for Dispatchers



July 11, 2011 Derecho



Courtesy of Jim Snapp

Shelf Cloud – June, 2010

## Severe Straight-Line Wind Storm Examples



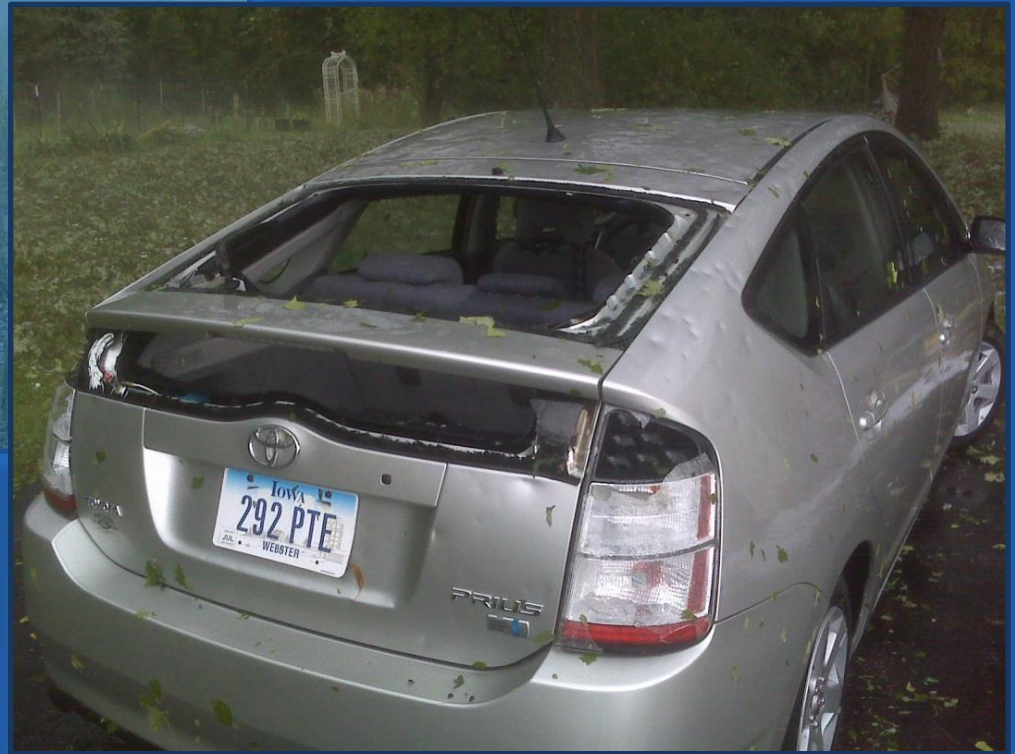
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# Severe Weather for Dispatchers



Northern Iowa, August 9, 2009



## Severe Hail Examples



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# Severe Weather for Dispatchers



## Flash Flooding

- Difference between river and flash flooding
- Life threatening – especially at night
- Impact information often lacking in real-time



Photos Courtesy of Des Moines Register / KCCI

## Mud Creek, August 2010



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# Severe Weather for Dispatchers



## Winter Weather

- Snow / Ice amounts
- Hazardous Travel Conditions
- Winter weather impacts?

Photos Courtesy of Alliant Energy

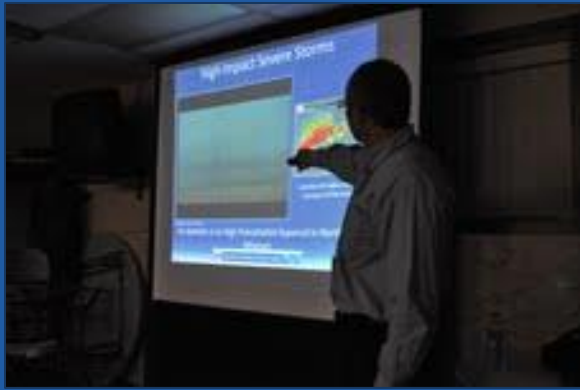


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# Severe Weather for Dispatchers

## Interested in Learning More?

- National Weather Service Storm Spotter Training
- Late February through April each spring
- Two hour training in the evening
- Check our website at [www.weather.gov/dmx](http://www.weather.gov/dmx) in January for the spotter training schedule
- Also available via webinar during the training season!



# Why does the NWS Call?

It's all about information – You have it and we need it!

Remember our mission? The protection of lives and property. We can't do it alone. We need you, the local experts!



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# Why does the NWS call?

- Storm spotter information
  - Real-time spotter reports
  - Storm damage, injuries and fatalities
  - Assist with local warning decisions
- Coordination
  - “Heads-up” prior to storm
  - Authenticate non-weather emergency messages



# When to Contact the NWS

- When you have weather-related reports
  - Spotter or public reports? Road closures? 911 outages?
- For specific needs (weather, hazmat support, other?)
- If you need clarification on a forecast or warning
- To schedule a visit/tour of the National Weather Service
- To let us know how an event went (feedback)



# What Should be Reported?



Tornadoes

Funnel Clouds

Rotating Wall Clouds

Hail

Wind ( $\geq 50$  mph)

Flooding

Heavy Rain ( $\geq 1$  per hr)

Fatalities

Injuries

Damage



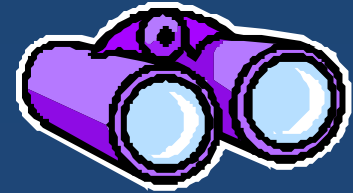
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# What is a Good Spotter Report?

- Who? (Spotter or public?)
- What? (Nature of the report)
- Where? (reference nearest city, street address)

*Can use Latitude/Longitude*

- When? (time of event)
- Movement? (direction and speed, if applicable)
- Use proper terms
- Damage, injuries or deaths?
- Be as specific as possible!





# When to Contact the NWS



It is simply not possible for you to “bug” us

More calls = High confidence

High confidence = Accurate and Timely Warnings

*Remember that we are here to help you!*



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# Optimizing Communications



Text (LETS)

Internet/e-mail

Phone  
Voice/text

NWSChat

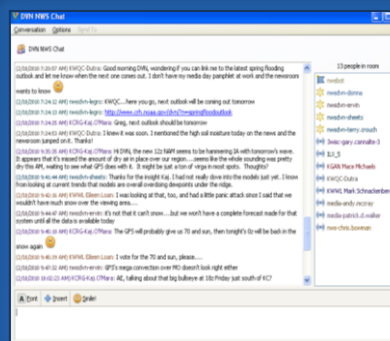
NAWAS/MICRN



Internet



Phone



NWSChat



MICRN



NAWAS



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# Optimizing Communications

Email at:

[dmx.spotterreport @noaa.gov](mailto:dmx.spotterreport@noaa.gov)

This is a spotter reporting e-mail account. NWSChat is a preferred method for dispatchers to use, but the email account is an option



## How to contact the NWS

# Optimizing Communications

Spotter hotline SKYWARN  
number:

1-800-SKYWARN (1-800-759-  
9276)

We also receive spotter  
reports via text messaging  
at:

(515) 240-5515



## How to contact the NWS



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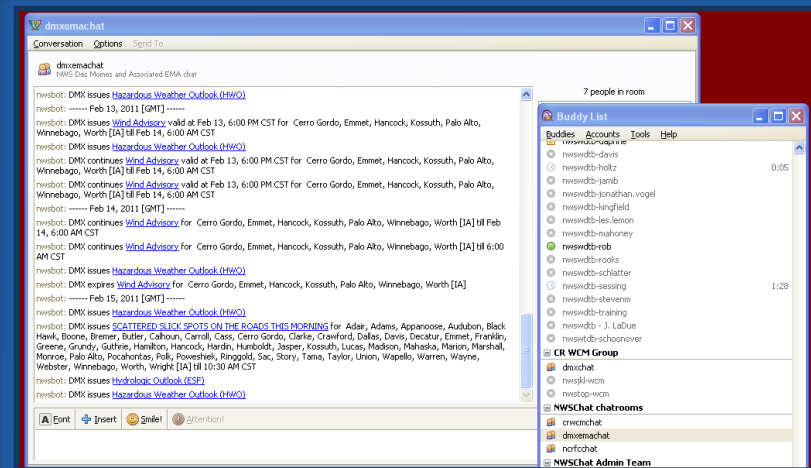


# Optimizing Communications

## NWSChat

- Private, secure chat and instant messaging service between NWS, dispatch offices and Emergency Managers.
- Ability to quickly share and view information from NWS and nearby counties. Includes automated weather feed which is the fastest way to receive NWS warnings.
- Feed includes ability to graphically display radar info and exact warning areas.
- Great for siren activations.
- For additional information contact Senior Forecaster Brad Small at:

*bradley.small@noaa.gov*



## How to contact the NWS

# Optimizing Communications

## MICRN – Metro Incident Command Radio Network



Eight central  
Iowa counties  
with over 40  
agencies on the  
network

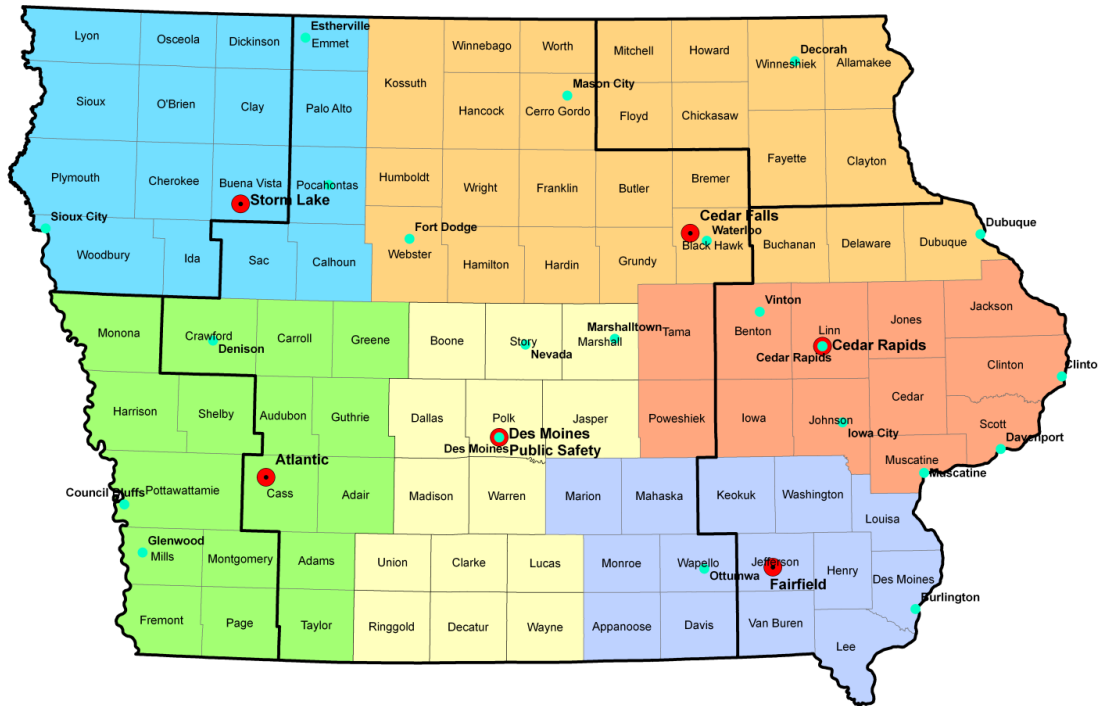
## How to contact the NWS



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# Optimizing Communications

## NAWAS/IOWAS



Iowa State Patrol  
Warning Point areas  
and IOWAS locations

**Red** - ISP Warning  
Points

**Blue** - Other IOWAS  
locations

*All NWS offices have  
a line*

## How to contact the NWS



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# Optimizing Communications

## Social Media?

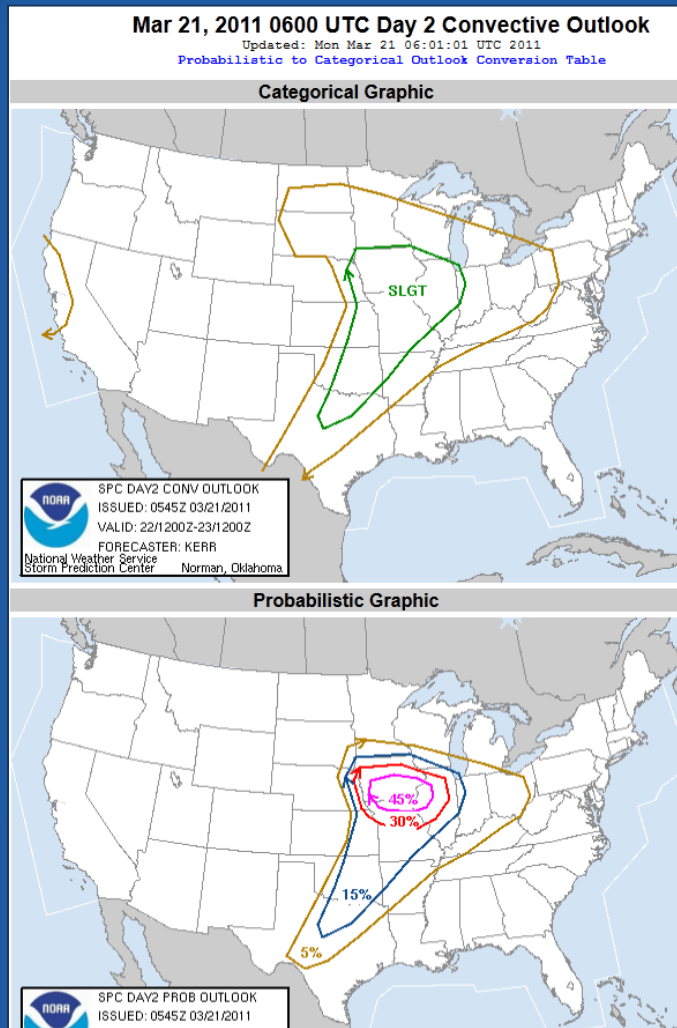
- Twitter – Use #nwsdmx to send a Twitter report
- Facebook – NWS Des Moines has a Facebook page. It's a great page to follow. Storm, and storm damage pictures and videos should be posted



## How to contact the NWS



# Case Study – Tornado Event

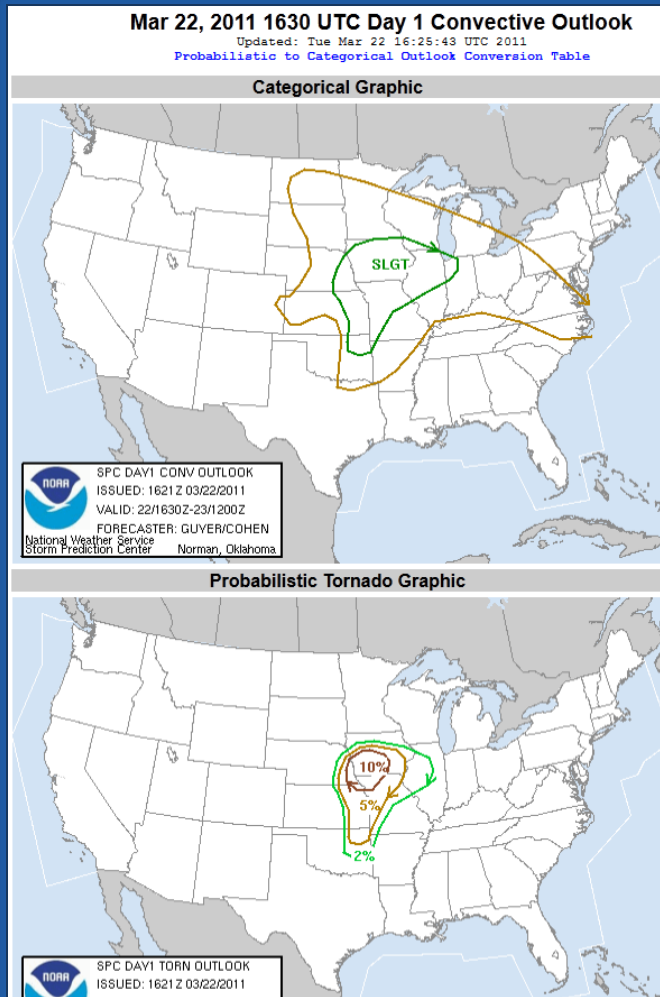


Outlook Phase: 12-72  
hours in advance

- NWS Products – Storm Prediction Center (SPC) Convective Outlooks, NWS Des Moines Hazardous Weather Outlooks
- Enhanced NWS Decision Support Services - Severe weather risk may be highlighted in the NWS Weather Story

Madison County EF2 Tornado Event – March 22, 2011

# Case Study – Tornado Event



## Outlook Phase: 6-12 hours in advance

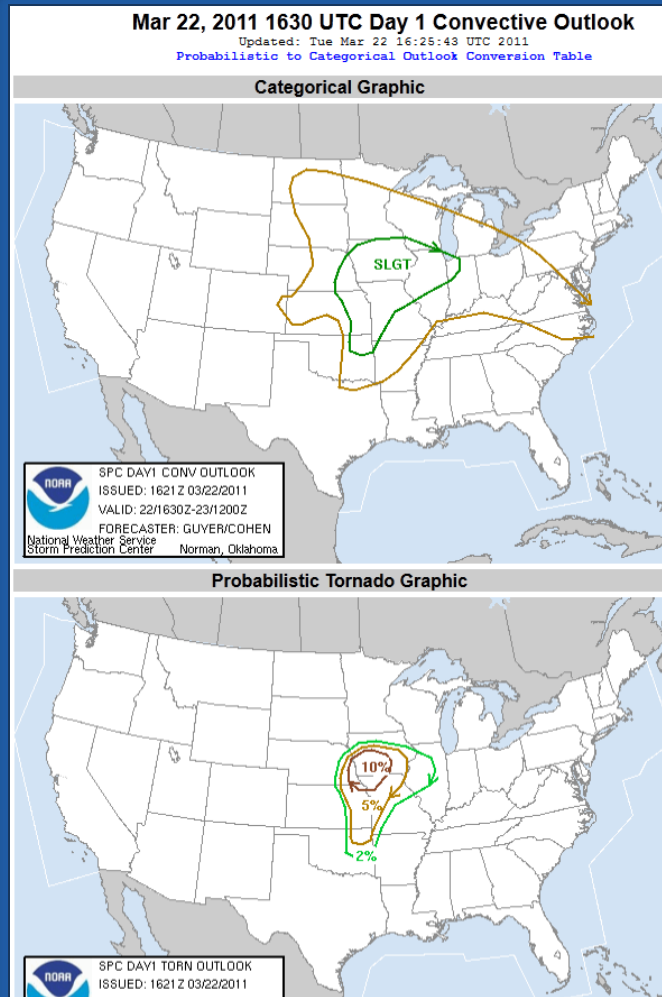
- NWS Products – SPC Convective Outlooks, NWS Des Moines Hazardous Weather Outlooks
- Enhanced NWS Decision Support Services - Headlined on DMX website, risk sent through Social Media, emergency manager webinar held, multi-media web briefing on NWS website

## Madison County EF2 Tornado Event – March 22, 2011



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# Case Study – Tornado Event



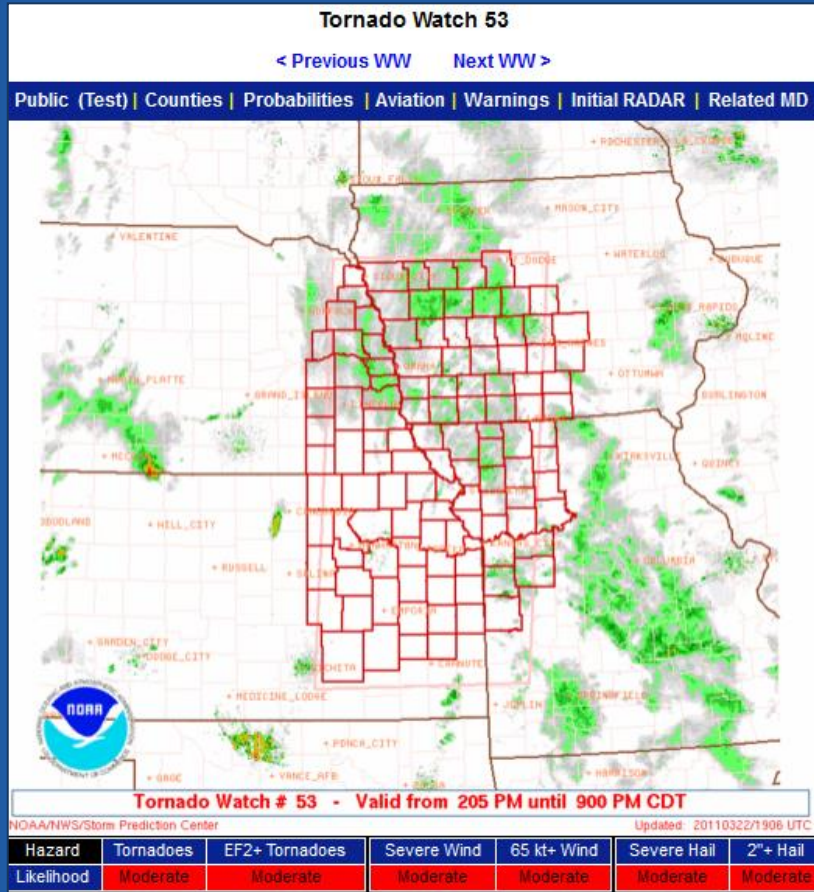
## Outlook Phase: 6-12 hours in advance

- Possible dispatcher actions (with respect to the NWS)
  - Notification of spotter groups?
  - Watch NWS web briefing?
  - Other coordination or actions?
  - Verify NWS communications such as NWSChat account

## Madison County EF2 Tornado Event – March 22, 2011

# Case Study – Tornado Event

## Watch Phase: 0-6 hours in advance



NWS Products – SPC Watches (is it a Potentially Dangerous Situation (PDS) watch? ), possible NWS Des Moines Special Weather Statements (SPS)

Enhanced NWS Decision Support Services – “Occasional” NWS calls to dispatch offices to coordinate prior to warning, risk highlighted on website and possibly through Social Media

## Madison County EF2 Tornado Event – March 22, 2011



# Case Study – Tornado Event

## Watch Phase: 0-6 hours in advance

- Possible dispatcher actions (with respect to the NWS) –
  - Notification of spotter groups?
  - Watch dissemination?
  - Coordinate with emergency manager or spotter net controller (amateur radio?)
  - Contact NWS with questions?  
*Phone, Chat, MICRN, etc.*

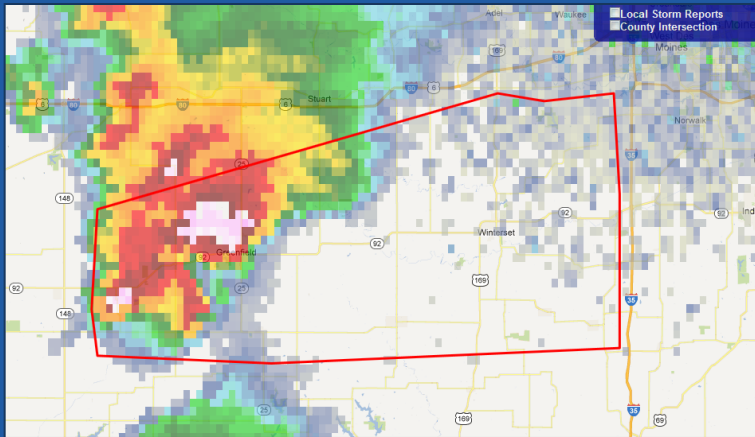


NWS Des Moines communications  
desk, March 22, 2011

## Madison County EF2 Tornado Event – March 22, 2011

# Case Study – Tornado Event

## Warning Phase: 0-1 hour in advance



Courtesy of Iowa Environmental Mesonet

NWS Tornado Warning issued at 544 PM CDT, March 22, 2011

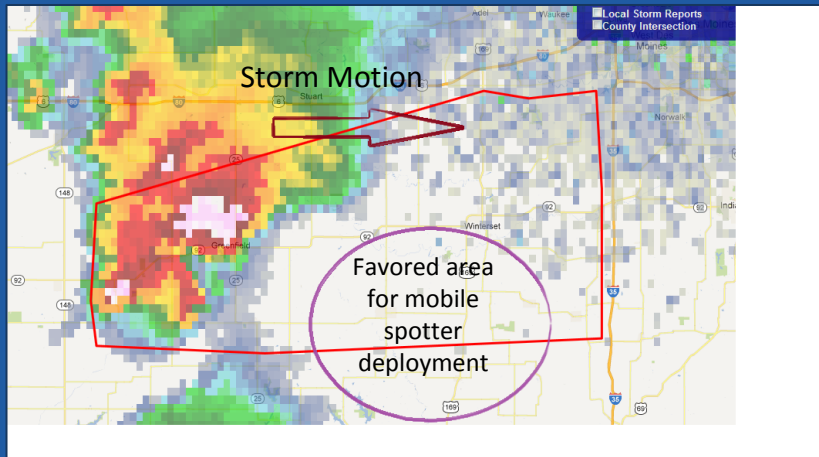
- NWS Products – NWS warnings, Local Storm Reports (LSR), watch updates
- Enhanced NWS Decision Support Services – “Occasional” NWS calls to dispatch offices to coordinate during warnings, dissemination of warning products, risk highlighted on website and possibly through Social Media

## Madison County EF2 Tornado Event – March 22, 2011

# Case Study – Tornado Event

## Warning Phase: 0-1 hour in advance

- Possible dispatcher actions (with respect to the NWS) -
  - Relaying spotter reports to NWS – *using fastest communication system?*
  - Local warning dissemination – *siren activations?*
  - Coordinate with emergency manager or spotter net controller (amateur radio?)  
- *are they in charge of relaying reports to NWS?*
  - Contact NWS with questions?  
*Phone, Chat, MICRN, etc.*



Courtesy of Iowa Environmental Mesonet

NWS Tornado Warning issued at 444 PM  
March 22, 2011

## Madison County EF2 Tornado Event – March 22, 2011



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# Case Study – Tornado Event



Tornado in southwest Iowa, March 22, 2011  
*Brad Nelson*

## Warning Phase: Tornado in progress

- NWS Products – NWS Severe Weather Statements (SVS), LSR's, new warnings?, “**emergency**” wording in warning/statement?
- Enhanced NWS Decision Support Services – “Occasional” NWS calls to dispatch offices to coordinate during warnings, dissemination of warning products, risk highlighted on website and possibly through Social Media



NWS Des Moines Warning Team  
March 22, 2011

## Madison County EF2 Tornado Event – March 22, 2011



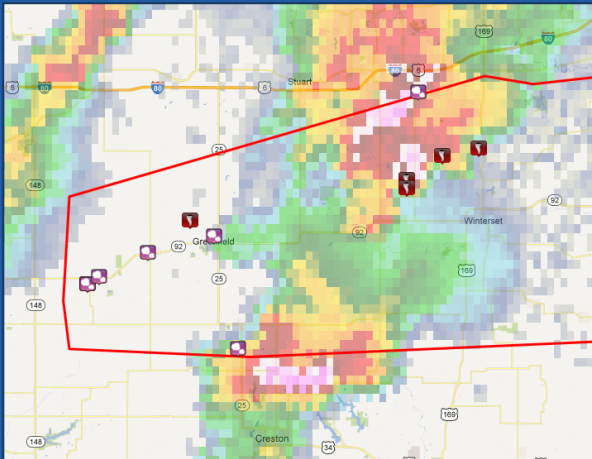
Building a Weather-Ready Nation



# Case Study – Tornado Event



Tornado in southwest Iowa, March 22, 2011  
*Brad Nelson*



Radar and warning display valid at 614 PM CDT. Reported hail and tornado locations provided

## Warning Phase: Tornado in progress

- Possible dispatcher actions (with respect to the NWS) -
  - Relaying spotter reports to NWS – *using fastest communication system?*
  - Local warning dissemination – *siren activations?*
  - Coordinate with emergency manager or spotter net controller (amateur radio?) – *are they in charge of relaying reports to NWS?*
  - Contact NWS with questions? *Phone, Chat, MICRN, etc.*

## Madison County EF2 Tornado Event – March 22, 2011

# Case Study – Tornado Event

## Post Event

- NWS Products – Watch/Warnings cancelled or expired, LSR's issued Enhanced NWS Decision Support Services – Possible call to the county to finalize initial damage estimates, coordination with the county concerning damage survey activities, conducting survey in coordination with the emergency manager the following day(s). Storm Survey results are released to the media and placed on the NWS website.



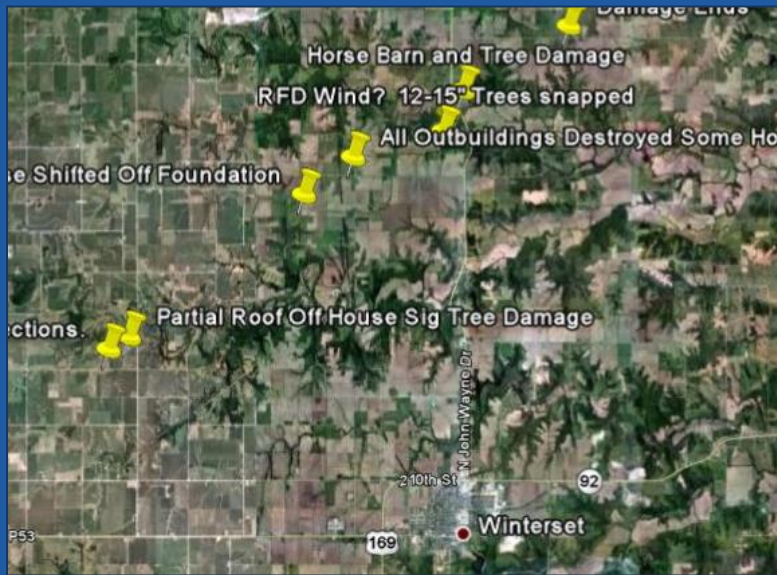
NWS Des Moines Storm Surveyor providing a media interview in the field, May, 2011

## Madison County EF2 Tornado Event – March 22, 2011



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# Case Study – Tornado Event



Tornado damage locations



Tornado damage

## Storm Survey results for Madison County March 22, 2011

- EF2 Tornado – Peak wind of 120 mph
- Length – 11 miles
- No injuries or deaths!



Building a Weather-Ready Nation

# Help us improve...

- What could we do better?
- Recent Problems?
- Let us know...
- Call or E-mail: Jeff Johnson

National Weather Service

Des Moines, IA

[jeff.johnson@noaa.gov](mailto:jeff.johnson@noaa.gov)

515-270-4501 Ext.726



# Thank you!!!



National Weather Service  
Des Moines, IA